

## Study Guide

Student Edition  
Pages 131–137**Angles and Parallel Lines**

If two parallel lines are cut by a transversal, then the following pairs of angles are congruent.

corresponding angles      alternate interior angles      alternate exterior angles

If two parallel lines are cut by a transversal, then consecutive interior angles are supplementary.

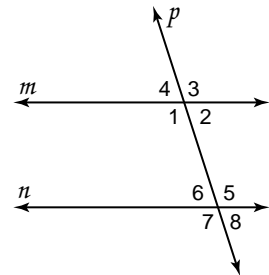
**Example:** In the figure  $m \parallel n$  and  $p$  is a transversal. If  $m\angle 2 = 35$ , find the measures of the remaining angles.

Since  $m\angle 2 = 35$ ,  $m\angle 8 = 35$  (corresponding angles).

Since  $m\angle 2 = 35$ ,  $m\angle 6 = 35$  (alternate interior angles).

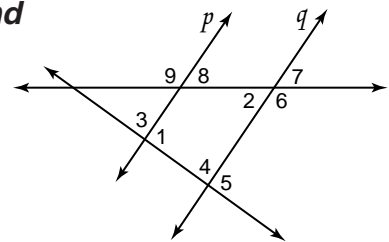
Since  $m\angle 8 = 35$ ,  $m\angle 4 = 35$  (alternate exterior angles).

$m\angle 2 + m\angle 5 = 180$ . Since consecutive interior angles are supplementary,  $m\angle 5 = 145$ , which implies that  $m\angle 3$ ,  $m\angle 7$ , and  $m\angle 1$  equal 145.

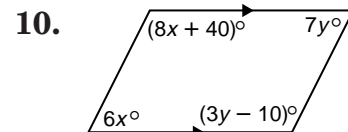
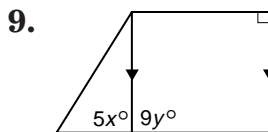
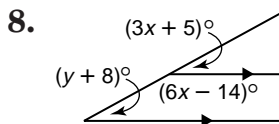


In the figure at the right  $p \parallel q$ ,  $m\angle 1 = 78$ , and  $m\angle 2 = 47$ . Find the measure of each angle.

1.  $\angle 3$
2.  $\angle 4$
3.  $\angle 5$
4.  $\angle 6$
5.  $\angle 7$
6.  $\angle 8$
7.  $\angle 9$



Find the values of  $x$  and  $y$  in each figure.



Find the values of  $x$ ,  $y$  and  $z$  in each figure.

